MEMORANDUM DM 99-06

Date: May 14, 1999

To: All Coal Mine Operators

From: Frank A. Linkous

Subject: Practical Exercises Included In Examinations For Underground Mine Foremen and Surface and Underground Electrical Repairmen

The Board of Coal Mining Examiners, at its regular meeting on March 4,1999, authorized the addition of practical exercises as part of certification examinations for underground mine foremen and surface and underground electrical repairman. The approved practical exercises will be included as part of examination procedures for all underground mine foremen and electrical repairmen certification examinations after July 1, 1999.

Attached is a summary of the approved exercises for these certification examinations. All miners will be informed at the time of application about this requirement. Applicants will be provided information and assistance to help prepare for the practical sections of these examinations.

Mine foremen and electrical repairman certifications establish accountability and responsibility for critical safety duties required by the Coal Mine Safety Laws of Virginia. Therefore, it is necessary that those miners certified by the Board of Coal Mining Examiners demonstrate the practical skills essential for effective performance of duties and responsibilities.

Any person having questions concerning these standards may contact the Division of Mines at (540)523-8234.

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Attachment(s)

Approved Additions To The Virginia Mine Electrician Certification Examination

The following five practical testing stations will be incorporated into the underground electrical repairman certification examination. These stations will require applicants to demonstrate a practical, safe working knowledge of basic electrical testing and troubleshooting procedures. Applicants will be required to have knowledge of electrical schematics and demonstrate safe use of a volt-ohm meter on an energized (thirty-six) volt circuit. A thirty-six volt (DC-direct current) circuit is an operationally safe voltage should accidental contact be made with the energized circuit. Each applicant will be allowed 25 minutes to complete each station. NOTE: The surface electrical examination will incorporate Stations 1-4 only.

STATION NO. 1 – Control Circuit Troubleshooting – Electrical Schematic Reading

This station will require the applicant to be able to read a basic control circuit schematic and demonstrate safe testing/troubleshooting procedures on a thirty-six volt (DC) control circuit panel board with a standard Simpson 260 volt-ohm meter. Each applicant will be required to identify two discrepancies on the panel board that will test the applicant's ability to read an electrical schematic and safely troubleshoot an energized circuit.

STATION NO. 2 – Electrical Examinations – Record Keeping

This station will require the applicant to identify electrical examination deficiencies and correctly complete weekly and monthly electrical examination records. A scenario of examinations, tests and deficiencies will be provided, and using this information applicants will complete the required records.

STATION NO. 3 – Cable Troubleshooting

This section will require the applicant to identify all of the following in a de-energized section of cable: open phase, phase to phase, open ground, phase to ground, open ground monitor, ground to ground monitor fault. Two cables will be used to design the above mentioned circuits and instructions will be given to each applicant to detect the required circuits.

STATION NO. 4 – Circuit Breaker Troubleshooting

This station will require the applicant to safely examine, test and troubleshoot a circuit breaker panel. Applicants will be required to identify those visual examinations required to be conducted, troubleshoot a basic ground or ground monitor circuit discrepancy and adjust a circuit breaker for a specified short circuit setting.

STATION NO. 5 – Permissibility

This station will require the applicant to identify ten permissibility discrepancies that have been created on a small permissible panel board enclosure. The applicant will be required to make verbal recommendations to correct two of the permissibility discrepancies. Discrepancies may include: enclosure flange opening, bolts, bolt holes, enclosure cover, packing gland installation.

Approved Additions To The Virginia Underground Mine Foreman Certification Examination

The following practical exercises will be incorporated as part of the underground mine foreman certification examination. These exercises will require applicants to demonstrate understanding of practical mine ventilation, roof control, and emergency response standards. Fifteen minutes will be allocated for each exercise.

VENTILATION

Exercise 1

The applicant will be given an anemometer and asked to take an air reading in the confines of a box provided with a ventilating fan and designed to represent a mine air course. The applicant will also be given measuring devices and asked to determine the area of the box. The applicant must then calculate the volume of air coursing through the box.

Exercise 2

The applicant will be given a sketch showing the face area of one entry on a coal section. The sketch will show dimensions of the entry and location of face curtain. Velocity of air behind the curtain will also be given. The applicant will be asked to calculate the mean entry velocity.

Exercise 3

A sketch of a mine map with mains and two operating sections will be given to the applicant. The applicant will be asked to mark locations where last-open-crosscut readings, intake split readings, and return split readings are to be taken weekly.

ROOF CONTROL

Exercise 1

A sketch of a face entry showing a pattern of bolts will be given to the applicant. Entry dimensions will be detailed on the sketch. The instructions will identify the type of roof drill at the mine (single head, double head, inside/outside controls). The applicant will then be asked to fill in blank dimensions on the sketch which show roof bolt spacing. Finally the applicant will be asked to note the roof bolt installation sequence on the sketch.

Exercise 2

This exercise will include a partial sketch of a pillar section with dimensions. The sketch will show the locations of cuts for a partial pillar plan. The applicant will be asked to number the cuts in the correct sequence. Second, breaker and roadway timbers are to be noted on the sketch. Third, the posts are to be numbered in order to correspond with the cuts being mined.

Conditions

The applicant will be given a series of questions describing conditions that may be encountered underground. The applicant must choose the most applicable solution from a set of multiple choice answers.

EMERGENCY RESPONSE

Exercise 1

The applicant will be provided a portion of a mine map including a working section which will indicate activities being performed in the area depicted. An emergency incident will be introduced (fire, ignition, inundation) and the applicant will be evaluated on his knowledge and understanding of emergency response procedures.